Subdivision Rules & Regulations Update Recommendations from Various Plans and Studies

April 24, 2020

Various plans and studies completed by the Town over the past two decades have included recommendations that may affect the Subdivision Rules and Regulations. Copies of these plans and studies are all available on the Planning Department Web site, under the headings of "Studies & Reports: Completed" and "Studies & Projects: Current."

Comprehensive Master Plan (2001)

It's been 20 years, but many of the recommendations that apply to the subdivision regulations may still be applicable.

Recommendations that touch on subdivision regulations:

- Add a "rural street" category to SRR (offered as a way to manage traffic)
- Adopt regulations for rural roads and sidewalks (proposed as a means of moderating the impact of traffic growth)
- Amend subdivision regulations to require retention of open space for wildlife corridors on all parcels located between or adjacent to open space (currently optional through "Flexible zoning")
- Configure streets to keep through traffic off residential streets
- Create bike lanes
- Expand SRR to include hilltop conservation, view lines and unique natural areas
- Increase sidewalk setbacks from road pavement to better manage neighborhood traffic, increase safety, and accommodate landscape.
- Manage neighborhood traffic to increase safety within neighborhoods by reducing pavement areas
- Prioritize sidewalk connections between residential areas and activity centers
- Provide incentives for developers to construct rural sidewalks and bikeways (not exactly compatible with rural, tree-lined roads like we have in many parts of Town)
- Adopt bikeway standards
- Evaluate by-laws, regulations, tax policies for stronger provisions to preserve/conserve open spaces, historic features, to protect significant farmlands
- Reduce amount of raw land available for development by changing zoning and subdivision regulations

Bicycle and Pedestrian Plan (2016)

Recommends that provisions for sidewalks and bike lanes be included in subdivision rules.

Low Impact Development (2016)

LID is focused primarily on managing stormwater through techniques that minimize the generation of additional runoff and handle runoff with natural rather than structural means as much as feasible.

The study compares Grafton's subdivision regulations with "best practices," and notes where the regulations could better align with best practices:

- Common driveways up to 4 units
- Limits on clearing
- Limits on impervious surfaces
- Siting of LID features
- Permeable paving
- Allow surficial ponding
- Street location to minimize grading and road length, and avoid important natural features
- Reduce road widths where possible
- Allow hammerhead turnaround on dead end streets
- Center landscaping on cul-de-sacs
- Open drainage with roadside swales and no curbs
- Allow utilities closer to or in roads, to reduce ROW width and roadside swales
- Permeable sidewalks
- Flexibility on sidewalks

Housing Production Plan (2018)

The plan recommends amending flexible development to better promote affordable housing (greater incentives, e.g., density bonuses, for affordable housing; flexibility to build housing other than single-family in residential districts). Currently, the rules for flexible development are specified entirely within the zoning bylaw.

The Board may wish to consider whether it might make sense to shift some of the flexible development regulations from the zoning bylaw to the subdivision rules. This might make administration of flexible development a bit easier, particularly if situations that currently require waivers for a flexible development could instead be expressed as variations of rules that apply specifically to flexible developments. This may or may not turn out to be practical.

Open Space and Recreation Plan (2020)

Recommendations for subdivision regulations include:

- Reconcile town stormwater regulations with the subdivision rules and regulations to ensure consistency and enhance protection of land and water resources.
- Amend subdivision regulations so that they require the retention of open space for wildlife corridors on all parcels located between or adjacent to open space.
- Strengthen low impact development (LID) requirement language in town bylaws.
- Amend flexible development rules in Grafton Subdivision Rules and Regulations to require developers to clearly and permanently mark open spaces in subdivisions through the installation of signage or other permanent method.

Subdivision Rules & Regulations Revisions

Dave Robbins January 6, 2020

The Subdivision Rules & Regulations were last updated in April 2009. The Planning Board has discussed a number of times in recent years the need to make some updates. As a means of initiating discussion and consideration of updates, with the objective of completing an update in 2020, here is a first cut at a list of topics to be considered, based on my initial front-to-back review of the document and recollection of topics the Board has discussed.

1) Nits: punctuation, spelling, formatting

I have a list of over a dozen such nits. Further review may identify others.

2) Terminology

Inconsistent, outdated, or unclear terminology is used in a number of places. I've identified a number of terminology issues that should be cleared up. Further review may identify others.

3) Clarifications: wording may not say what is intended

I have a list of over a dozen places where the wording is unclear, may not quite say what is intended, or may say the opposite of what was intended. These, and perhaps others, will need to be reviewed with an eye toward revising the wording to be clearer, or in at least one case, to figure out what it was trying to say.

4) Stormwater management

It's been pointed out that some of the stormwater requirements in the subdivision rules conflict with Grafton's current stormwater standards. We'll want to revise the rules to eliminate that conflict, and to ensure that Grafton's stormwater standards are always applied. Assistance from Graves Engineering will be essential on this topic.

5) Dead ends

The Board should consider whether the current rules should be changed in some manner, considering how Grafton has developed in the 40 or so years since the rules were written. A look at how other towns limit or otherwise regulate dead ends would provide some useful context for this.

6) Street separation

The Board should consider whether the current rules should be changed in some manner, considering how Grafton has developed in the 40 or so years since the rules were written. A look at how other towns regulate street separation would provide some useful context for this.

7) Engineering rules

It might be a good idea to review the various engineering rules and standards, including grades, curves, cuts, fills, intersection angles and the like, and including requirements for submitted plans. Are our requirements in line with common practice, or do we have some outliers or outdated requirements? This is a topic that Graves Engineering would be able to address.

8) Street light rules

The current rules should perhaps be updated to align with the town's current practices, and to ensure the Select Board's involvement at the right time in the review process.

9) ANR rules

This might be the place to create a requirement that the existing and proposed lot lines be distinguished from one another on an ANR plan. The lack of such distinction has been a source of recurring discussion and confusion. We probably want to get some advice from folks who draw such plans regarding how best to make such a distinction.

10) Common driveways

The rules limit a common driveway to 500 feet, which just happens to be the dead-end street limit (although the common driveway rule does not explicitly reference the dead-end street rule). If the dead-end street rules are changed, the Board may or may not find it appropriate to change the common driveway rule.

11) Fire Dept. requirements

Review the subdivision rules for consistency with current fire department requirements, particularly for roadway width and hydrant location.

12) Traffic study requirements

The traffic study requirements in the subdivision rules are almost an exact duplicate of those in the zoning bylaw. There are some wording differences reflecting the document they appear in, and there are a few substantive differences. I have prepared a document placing the two sets of rules side by side, with the differences highlighted.

It might be best if those requirements appeared in only one of the two places, so as to avoid the need to make the same change in two places by two different means (Board vote vs. Town Meeting vote). If the two sets are retained, changes will have to be made in each to align them with one another. If only one set is retained, the Board will have to make sure that the retained set has the requirements worded as needed.

13) Incorporate Recommendations from Various Plans and Studies

A number of studies and plans have included recommendations for updates to the subdivision rules. Those recommendations should be reviewed for consideration. Said studies/plans include:

- Open Space & Recreation Plan (2020)
- Housing Production Plan (2018)
- Low Impact Development Study (2016)
- Comprehensive Master Plan (2001)

(Yes, the master plan is almost 20 years old, but it does include some recommendations that affect the subdivision rules but have not yet been acted on. Some of those recommendations may be out of date, but some may still be applicable.)

14) Fees

The current fee schedule is now almost 11 years old. Should it be updated? Are the current fees more or less in alignment with similar fees in other towns?

- 1) A traffic study shall be submitted with each application for a subdivision of greater than 20 dwelling units, or where required by the Planning Board.
- 2) The traffic study shall be conducted by a traffic engineer who will certify that he/she is a member of the Institute of Traffic Engineers.
- 3) For the purposes of this analysis, the terms below shall have the meaning indicated. The morning and evening "peak period" shall usually be the two hours between 7 A.M. and 9 A.M. and between 4 P.M. and 6 P.M. respectively. The morning and evening peak hour shall be that consecutive 60 minute segment within the "peak period" in which the highest traffic count occurs as determined by traffic counts of the peak period divided into 15-minute segments. For uses which have an exceptional hourly, daily, or seasonal peak period, the Planning Board may require that the analysis be conducted for that extraordinary peak period.
- 4) A street or intersection "likely to be affected by the development" is one which has an Average Daily Traffic (ADT) of 1,500 vehicles or more as well as one which either: 1) carries 10 percent or more of the estimated trips generated by the development or 2) in the case of an intersection, traffic from the proposed development will add 5 percent or more to the approach volumes, and others as the Board deems appropriate.
- 5) The traffic study shall include:
 - a) An estimate of trip generation for the proposed development showing the projected inbound and outbound vehicle trips for the morning and evening peak periods and a typical one hour not in the peak period. Where there is existing development of the same type of use on the site, actual counts of trip generation shall be substituted. Trip generation rates may be based on: 1) the "Trip Generation Manual, Third Edition" (or more recent editions as they become available) prepared by the Institute of Transportation Engineers, and, if applicable, 2) data about similar developments in Massachusetts or 3) data from professional planning or transportation publications, provided the methodology and relevance of the date from 2) and 3) is documented.
 - b) An estimate of the directional distribution of new trips by approach streets and an explanation of the basis of that estimate. Where there is existing development of the same type of use on the site, actual counts of trip directional distribution shall be submitted.
 - c) An assignment of the new trips to be generated by the proposed development to the segments of the Town street network, which shall include state highways in Grafton, which are likely to be affected by the proposed development.

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- d) Average Daily Traffic (ADT) on the streets likely to be affected by the development, counted for a 24 hour period.
- e) Intersection turning movement counts of the morning and evening peak periods at the intersections likely to be affected by the proposed development. In special circumstances where the peak traffic impacts are likely to occur at times other than the usual morning and evening peak periods, the Planning Board may require counts for those other peak periods.
- f) An inventory of the roadway characteristics of the principal approach streets adjacent to the development site and of the streets in the intersections at which turning movement counts are taken showing the width of the right of way and of the traveled way, traffic control devices, obstructions to adequate sight distance, the location of driveways or access drives within 1000 feet of the entrance to the site for uses that are substantial trip generators, and the presence or absence of sidewalks and their condition.
- g) In the case of a development in an abutting city or town, which will have a traffic impact on a street or intersection in Grafton which is likely to be affected by the proposed development for which the traffic study is being prepared, the traffic impact of the development in the abutting city or town shall be included in the traffic study provided: 1) that traffic impact is equal to or greater than that set forth in the test above; 2) the development has been approved by official action of that abutting city or town but is not operating at full capacity prior to the date that the traffic counts required by this section were taken, and 3) data on the traffic impact of that development, comparable to that required by this section, is available.
- h) An analysis of the effect on the capacity of those intersections in Grafton street system likely to be affected by the development during peak periods of: 1) the additional traffic generated by the development, and 2) additional traffic from other developments previously approved by the Town of Grafton for which a traffic study was required, or by an abutting city or town as provided above, is not operating at full capacity prior to the date that the traffic counts required by this section were taken. Analysis of the capacity of intersections shall be based on traffic "levels of service" as described in the "Highway Capacity Manual, 1985 Edition" published by the Transportation Research Board. This analysis may include an intersection of an access drive serving a development and a segment of the Grafton street system.
- i) Where mitigating measures or trip reduction programs are proposed, they shall be

- d) Average Daily Traffic (ADT) on the streets likely to be affected by the development (see 8.2.3), counted for a 24 hour period.
- e) Intersection turning movement counts of the morning and evening peak periods at the intersections likely to be affected by the proposed development (see 8.2.3). In special circumstances where the peak traffic impacts are likely to occur at times other than the usual morning and evening peak periods, the Planning Board may require counts for those other peak periods.
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- g) In the case of a development in an abutting city or town, which will have a traffic impact on a street or intersection in Grafton which is likely to be affected by the proposed development for which the traffic study is being prepared, the traffic impact of the development in the abutting city or town shall be included in the traffic study provided: 1) that traffic impact is equal to or greater than that set forth in the test in 8.2.3., 2) the development has been approved by official action of that abutting city or town but has not opened for use prior to the date that the traffic counts required by this section were taken, and 3) data on the traffic impact of that development, comparable to that required by this section, is available.
- h) An analysis of the effect on the capacity of those intersections in Grafton street system likely to be affected by the development (see 8.2.3) during peak periods of: 1) the additional traffic generated by the development, and 2) additional traffic from other developments previously approved by the Town of Grafton for which a traffic study was required, or by an abutting city or town as provided in subparagraph "g" above, which have not yet been opened for use prior to the date that the traffic counts required by this section were taken. Analysis of the capacity of intersections shall be based on traffic "levels of service" as described in the "Highway Capacity Manual, 1985 Edition" published by the Transportation Research Board. This analysis may include an intersection of an access drive serving a development and a segment of the Grafton street system.
- Where mitigating measures or trip reduction programs are proposed, they shall be

included in the traffic study at the time of filing of the application. Where the proposed mitigating measure is the construction of a traffic engineering improvement, evidence, such as letters of support, or commitment, or approval, or the award of a contract, may be submitted to show that construction of the traffic improvement is likely to occur.

- j) An estimate of the time and amount of peak accumulation of off-street parking.
- k) Estimates of the "level of service" of affected intersections in five years from the date of application without the development built and with it built.
- 6) The counts referred to above shall have been taken within the 12 months prior to the filing of the complete Definitive Plan application. The traffic engineer shall furnish an explanation of the methodology of the traffic study and additional data, upon request by the Board.

Traffic in the Zoning By-Law (Section 8.2)

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- k) Estimates of the "level of service, of affected intersections in five years from the date of application without the development built and with it built.
- 6) The counts referred to above shall have been taken within the 12 months prior to the filing of the application, unless otherwise waived by the SPGA. Upon request, the traffic engineer shall furnish an explanation of the methodology of the traffic study and additional data, as needed.

Subdivision Rules & Regulations Updates: Terminology February 6, 2020

1. Applicant, Subdivider, and Developer

The terms "developer" and "applicant" are frequently used, often it seems interchangeably. There is a distinction, so let's be sure the correct terms are used in context. Per the definitions, the applicant is the one who applied for the subdivision approval; the developer is the one who builds it. Up to the point of approval, we talk about the application. After approval, and before construction starts, we may still talk about the application (like when the plan is modified). Once work commences, and until all is complete, we're talking about the developer.

And occasionally, the term "subdivider" is used to refer to either the applicant or the developer. The appropriate term should be used.

Basically, when we use those terms, we mean "whoever is responsible for doing this thing, no matter what we call them."

Proposed changes for this terminology in various sections of the regulations:

- 2.5.2.3: This is about inspection fees, so here "applicant" should be "developer" as it is earlier in the paragraph.
- 3.2.1: Here, the "subdivider" is the applicant for a preliminary plan.
- 3.2.4.4: "developer" should be "applicant" the developer is not yet involved.
- 3.3.4.5: "developer" should be "applicant" the developer is not yet involved
- 3.3.7.3: "developer" should be "applicant" the developer is not yet involved (although here it's a bit muddy, since it's more likely that it is the developer who will be thinking about phasing, but we're still processing the application, so it's kind of more under control of the applicant)
- 3.3.8: We're asking the applicant for a performance guarantee, although it is the developer whose performance we want to guarantee. The plan has not yet received final approval, so it's really still the applicant we're dealing with.
- 3.3.11.1: We're talking here about completion of ways and utilities, which is the responsibility of the developer, we're also talking about the time agreed by the applicant. And it is the applicant who agreed, explicitly or implicitly, with the time for completion.
- 3.3.11.2 a): It's the developer who is requesting a Determination of Completeness; the term "applicant" right here could be taken to refer to the developer, who is applying for a Determination of Completeness. But because the SRR generally uses the term "applicant" to refer to the entity that applied for the subdivision approval, and because it is the developer who is responsible for requesting the Determination of Completeness, the term here should be "developer."

- 3.3.12.1 a): Since we're releasing lots that have been in development, "applicant" here should be "developer."
- 4.1.2.2 c): Here again the "subdivider" is the applicant.
- 4.12.2.1: Here again the "subdivider" is the applicant.
- 5.15.2: Here the "Subdivider" is the developer.
- 5.16.1: Because the improvements in question have been constructed, it is the developer here who is responsible for maintenance. So, we should change "applicant" to "developer" here.
- 6.3: For coordination, it's the applicant who starts out being responsible for coordinating reviews and permits, but then the developer who coordinates construction, inspections, and other activities related to construction and completion. So here, perhaps we really should be saying "applicant or developer, as appropriate" or something like that.

2. Planning Board

There are a couple of inconsistencies in how the Planning Board is referenced:

- 5.11.2: Street signs are to be of a design approved by "the Board" almost everywhere else, the term Board is qualified by either Planning or "of Selectmen." For consistency, assuming that Planning Board was intended here, it should be explicit.
- 5.12.3: And here the Planning Board is termed the "Grafton Planning Board," as if any other Planning Board might otherwise be assumed.

3. Drawings

Several different terms are used to specify the material on which certain drawings are to be submitted. Is "tracing cloth" still a thing? We may wish to use consistent terminology here.

- 3.2.2: Preliminary plan on "tracing paper or other reproducible substance"
- 3.3.11.2: As-built plan on "tracing cloth or other material suitable to the Planning Board"
- 3.3.12.3 c): Final acceptance plan on "tracing cloth"
- 4.7.2.5: Sewer plans on linen or Mylar.

4. Mass Highway Specifications

The definitions define "Standard Specifications" as the term to reference the 1995 Mass Highway Standard Specifications for Highways and Bridges. In the SRR we find references to two of the three parts of that document:

- Construction Details (Division II)
- Materials Specifications (Division III).

References to the Construction Details are mostly of the form "Section XXX," while references to the Materials Specifications are mostly of the form "Section M X.XX.X." But you have to be familiar with the Mass Highway document to recognize that these references are to that document.

In the SRR, we should clearly state how those parts of the document are referenced and be completely consistent in how we write those references. The current form of those references is not as clear and consistent as it could be.

Following are where those references are found, but with no proposal as of yet for a clearer and more consistent form:

- 4.2.1: Reference to granite curb dimensions doesn't specify what document the reference appears in; it is the Standard Specification Division III (Materials).
- 5.1.2: The two Mass Highway Dept documents referenced here are they the MHD references? Well, the MHD sections referenced are found in Division II of the Standard Specification. It might be helpful for some readers if we could state here that a reference to "MHD Section X" is to said section in Division II of said specification, and that a reference to "Section M" is to said section in Division III of said specification. Or some alternative means of clarifying said references for folks who are not accustomed to working with said specification and the common means of referring to it. Division II is subtitled Construction Details, and Division III is subtitled Materials Specifications.
- 5.2.1.4 a) Reference to "Section M 1.03.0 Type a" is to that section in Division III of the Standard Specification.
- 5.2.1.6: "Section 401" should perhaps be "MHD Section 401".
- 5.2.1.6: Section M.1.03.0 of the Standard Specifications is in Division III of said document.
- 5.2.2.1: Reference to Section 460 is presumably to MHD S. 460.

5. Other Terminology Items

- 3.3.7.2: We're talking endorsement here; it says "final approval may be conditioned on approval under c131s40," and what does "final approval" here mean? Does it mean that endorsement is withheld until an OOC is issued? And should local wetlands bylaw be included in this reference? It is already more or less implied in 3.3.7.1 a) that endorsement requires compliance with ConCom, which presumably means a wetlands bylaw OOC or Determination of Applicability. "Final approval" is equated with "endorsement" in the first paragraph of 3.3.7. We could perhaps ask for more consistent use of terminology here.
- 4.7.2: The terms "sewerage" and "sewage" seem to be used interchangeably. That may be OK, or it may be wise to be more consistent, particularly if there is a meaningful difference between the two terms.

4.7.3.3: Refers to "water district or appropriate utility" where 4.7.3.1 refers to "municipal water supplier, or of a public utility franchised to furnish water to the district within which the subdivision is located". Some consistency of terminology here would be good, although the meaning is clear enough.

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- h) An analysis of the effect on the capacity of those intersections in Grafton street system likely to be affected by the development during peak periods of: 1) the additional traffic generated by the development, and 2) additional traffic from other developments previously approved by the Town of Grafton for which a traffic study was required, or by an abutting city or town as provided above, is not operating at full capacity prior to the date that the traffic counts required by this section were taken. Analysis of the capacity of intersections shall be based on traffic "levels of service" as described in the "Highway Capacity Manual, 1985 Edition" published by the Transportation Research Board. This analysis may include an intersection of an access drive serving a development and a segment of the Grafton street system.

- segments of the Town street network, which shall include state highways in Grafton, which are likely to be affected by the proposed development (see 8.2.3).
- d) Average Daily Traffic (ADT) on the streets likely to be affected by the development (see 8.2.3), counted for a 24 hour period.
- e) Intersection turning movement counts of the morning and evening peak periods at the intersections likely to be affected by the proposed development (see 8.2.3). In special circumstances where the peak traffic impacts are likely to occur at times other than the usual morning and evening peak periods, the Planning Board may require counts for those other peak periods.
- f) An inventory of the roadway characteristics of the principal approach streets adjacent to the development site and of the streets in the intersections at which turning movement counts are taken showing the width of the right of way and of the traveled way, traffic control devices, obstructions to adequate sight distance, the location of driveways or access drives within 500 feet of the entrance to the site for uses that are substantial trip generators, and the presence or absence of sidewalks and their condition.
- g) In the case of a development in an abutting city or town, which will have a traffic impact on a street or intersection in Grafton which is likely to be affected by the proposed development for which the traffic study is being prepared, the traffic impact of the development in the abutting city or town shall be included in the traffic study provided: 1) that traffic impact is equal to or greater than that set forth in the test in 8.2.3., 2) the development has been approved by official action of that abutting city or town but has not opened for use prior to the date that the traffic counts required by this section were taken, and 3) data on the traffic impact of that development, comparable to that required by this section, is available.
- h) An analysis of the effect on the capacity of those intersections in Grafton street system likely to be affected by the development (see 8.2.3) during peak periods of: 1) the additional traffic generated by the development, and 2) additional traffic from other developments previously approved by the Town of Grafton for which a traffic study was required, or by an abutting city or town as provided in subparagraph "g" above, which have not yet been opened for use prior to the date that the traffic counts required by this section were taken. Analysis of the capacity of intersections shall be based on traffic "levels of service" as described in the "Highway Capacity Manual, 1985 Edition" published by the Transportation Research Board. This analysis may include an intersection of an access drive serving a development and a segment

- i) Where mitigating measures or trip reduction programs are proposed, they shall be included in the traffic study at the time of filing of the application. Where the proposed mitigating measure is the construction of a traffic engineering improvement, evidence, such as letters of support, or commitment, or approval, or the award of a contract, may be submitted to show that construction of the traffic improvement is likely to occur.
- j) An estimate of the time and amount of peak accumulation of off-street parking.
- k) Estimates of the "level of service" of affected intersections in five years from the date of application without the development built and with it built.
- 6) The counts referred to above shall have been taken within the 12 months prior to the filing of the complete Definitive Plan application, unless otherwise waived by the Board. The traffic engineer shall furnish an explanation of the methodology of the traffic study and additional data, upon request by the Board.

Traffic in the Zoning By-Law (Section 8.2)

of the Grafton street system.

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- j) An estimate of the time and amount of peak accumulation of off-street parking.
- k) Estimates of the "level of service, of affected intersections in five years from the date of application without the development built and with it built.
- 6) The counts referred to above shall have been taken within the 12 months prior to the filing of the application, unless otherwise waived by the SPGA. Upon request, the traffic engineer shall furnish an explanation of the methodology of the traffic study and additional data, as needed.